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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,392	01/15/2004	You-seop Lee	249/438	4957
27849	7590	10/01/2007		
LEE & MORSE, P.C. 3141 FAIRVIEW PARK DRIVE SUITE 500 FALLS CHURCH, VA 22042			EXAMINER WEINSTEIN, LEONARD J	
			ART UNIT	PAPER NUMBER
			3746	
			MAIL DATE	DELIVERY MODE
			10/01/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

10/757,392

Applicant(s)

LEE ET AL.

Examiner

Leonard J. Weinstein

Art Unit

3746

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 19 September 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

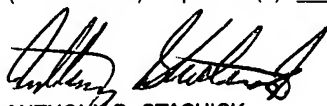
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: 1-19.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
13. ☐ Other: \_\_\_\_\_.

  
ANTHONY D. STASHICK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700

  
Leonard Weinstein

Continuation of 11. does NOT place the application in condition for allowance because: With regards anticipation rejection of claims 1-2, 6, 9-15, and 18 the applicant has argued that the Field et al. reference does not teach an inlet or an outlet portion of a pumping chamber that has a varied cross sectional area and a fluid flow mechanism operated via bubble expansion/contraction. Further the applicant argues that the interpretation of the outlet 14, manifold 4, and With regards to the anticipation rejection of claims 1-2, 6, 9-15, and 18 the applicant has argued that the Field et al. reference does not teach an inlet or an outlet portion of a pumping chamber that has a varied cross sectional area and a fluid flow mechanism operated via bubble expansion/contraction. Further the applicant argues that the interpretation of the outlet 14, manifold 4, and manifold outlet 5 of Field being in fluid communication, thus constituting a fluid outlet, is improper for being unreasonably broad. The applicant has made the assertion that due to the elements as discussed being formed in different parts of the Field reference; they cannot be construed as forming a single outlet from a pumping chamber. Further the applicant has argued that the examiner has set forth in the prior office action of July 18, an inconsistent interpretation of fluid exit 14. The applicant also argues that the Field reference does not teach a pumping chamber physically configured such that bubble expansion/contraction forms sufficient pressure gradient to affect fluid flow in/out of a pumping chamber.

1. With regards to applicant's argument that the Field et al. reference does not teach an inlet or an outlet portion of a pumping chamber that has a varied cross sectional area and a fluid flow mechanism operated via bubble expansion/contraction the examiner disagrees.

- As stated in the office action of July 18, 2007, Field teaches a pumping chamber 130 wherein a fluid flow into or out of the pumping chamber 130 is by expansion and contraction of the bubbles (Field et al. - col. 16 ll. 14-25), and a cross-sectional area of a fluid exit varies along a direction of fluid flow, as "element 14 is in communication with element 5 via element 4 with element 5 having a triangular cross-section as shown in figure 1A and applied to the embodiment of figure 3." Office Action of July 18, 2007 page 2 item 4 lines 10-12.

2. With respect to applicant's assertion that the interpretation of outlet 14, manifold 4, and manifold outlet 5 as constituting a single outlet is unreasonably broad the examiner disagrees. The applicant objects to this interpretation on the basis that due to the elements as discussed being formed in different parts of the Field reference; they cannot be construed as forming a single outlet from a pumping chamber and has cited the following disclosure from Field, "the pressure regulator and the print head are shown as separate components." Field et al. reference, col. 8, ll. 8-9.

- In response to applicant's assertion that the elements as cited cannot be considered a single outlet the examiner directs the applicant's attention to the disclosure of Field which states "The pressure regulator and the print head form part of a print cartridge (not shown)." Field et al. reference, col. 8 ll. 6-7. This disclosure clearly states that the pressure regulator and the print head are components of a single element, a print cartridge, and therefore the elements cited, fluid exit 14, manifold 4, and manifold outlet 5, being in fluid communication constitute a single fluid exit from the pumping chamber of a pump, here being the printer cartridge. It is not unreasonably board to interpret the elements as cited which all share a single pathway for fluid to flow as being a single fluid outlet and therefore having a varied cross-sectional area. Additionally, Field presents the embodiment of Figure 1A as an example and further discloses, "Alternatively, the pressure regulator may share elements with the print head." Field et al. reference, col. 8, lines 9-10. Therefore it follows that elements such as the fluid exit 14, manifold 4, and manifold outlet 5 which are in fluid communication with one another, could be shared by the pressure regulator and the print head and one of ordinary skill in the art would accord these elements together, as forming a fluid exit connected to a pumping chamber.

3. With regards to applicant's argument that the interpretation of fluid exit 14 of the Field reference by the examiner was inconsistent, the examiner disagrees.

- The examiner identified the fluid exit 14 in item 4 of the Office Action of July 18, 2007, as being defined by element 14 being a fluid exit 14 in communication with elements 4 and 5. As discussed above the elements as cited constitute a single fluid exit from a pumping chamber and therefore citing the single elements as they apply to the limitations as claimed is neither improper nor inconsistent. Further with regards to applicant's submission that the fluid exit recited in claim 1 can be represented at most by a single element the examiner contends that the applicant is arguing for elements as they are found as examples or embodiments in the specification, however not claimed explicitly.

4. With regards to applicant's contention that the Field reference does not teach a pumping chamber physically configured such that bubble expansion/contraction forms sufficient pressure gradient to affect fluid flow in/out of a pumping chamber the examiner disagrees.

- In response to applicant's argument the examiner is inclined to point out that the characteristic of "a pumping chamber physically configured, such that bubble expansion/contraction forms sufficient pressure gradient to affect fluid flow in/out of a pumping chamber" is not a limitation that the applicant has explicitly claimed in any respect. Further the examiner contends that the recitation of "a fluid flow into or out of the pumping chamber is by expansion and contraction of the bubbles" is not a limitation that defines an invention in which the formation of a bubble causes a fluid to flow, over an invention that uses a bubble as mechanism similar to a valve that permits a fluid to flow. In addition Field does teach that the formation of the bubble and therefore an expansion of which, is controlled to cause a fluid pressure in an ink outlet 14 to rise towards ambient pressure. A pressure gradient is formed between an upstream region 31 and a constriction 32 due to the size of the bubble. Field states that, "Although, the bubble partially blocks the ink delivery channel 16, an ample supply of ink can flow around the bubble into the ink outlet 14. As a result the ink pressure in the ink outlet rises towards the ambient pressure." Field et al. reference, col. 10, lines 1-20. It is therefore obvious that the bubble causes a pressure gradient to form between an upstream region 31 and a constriction 32, which affects a fluid flow in and out of the pumping chamber.

5. As discussed above the cited references teach each and every element of independent claim 1, and therefore, the rejection of claims 3-5, 7-8, 16-17, and 19 under 35 U.S.C. § 103 (a) is upheld.